

**REMARKS**

Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

**Summary of the Office Action**

The title stands objected to.

The drawings stand objected to.

Claims 1-15 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

**Summary of the Response to the Office Action**

A copy of the United States Patent and Trademark Office postcard receipt stamped November 26, 2001 is submitted herewith. Applicant amends the title, the specification, and claims 1, 3-6, 8-10 and 12-15 by this amendment. Claims 1-15 remain pending for consideration.

**Priority**

The Office Action Summary (PTO-326 Form) accompanying the Office Action acknowledges the claim for priority. However, the Office Action Summary does not indicate whether a certified copy of the priority document has been received. Thus, Applicant respectfully requests acknowledgment of the filing of a certified copy of Korean Patent Application No. P2001-54889. A certified copy of this Korean patent application was filed, and stamped received by the United States Patent and Trademark Office on November 26, 2001. As evident on the enclosed copy of the United States Patent and Trademark Office postcard receipt

stamped November 26, 2001, Applicant has duly filed both a Claim for Priority and a certified copy of the Korean patent application as required by 35 U.S.C. §119(b). Accordingly, acknowledgment of receipt of such filing is respectfully requested.

### **Objection to the Title**

The title stands objected to for allegedly being not descriptive. Applicant amends the title to address the Examiner's concerns. Accordingly, Applicant respectfully requests the objection to the title be withdrawn.

### **Objection to the Drawings**

The drawings stand objected to. In particular, the Office Action asserts that FIGs. 9 and 12 are drawn in such a way that makes the invention incomprehensible. Applicant amends the specification to address the Examiner's concerns. For example, the feature of "modulated data bands a, b, c, and d," is amended to --modulated data band Band(a, b, c, d)-- to be consistent with the reference in FIGs. 9 and 12. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

### **Claim Rejections Under 35 U.S.C. §112, First Paragraph**

Claims 1-15 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. To the extent that this rejection may be applied to the claims, as newly-amended, it is respectfully traversed for at least the following reasons.

In particular, the Office Action asserts that "[i]t is unclear as to what the applicant means when referring to: “first and second approximation[s] in two directions perpendicular to each

other within the modulated data bands to derive unregistered modulated data positioned between the modulated data.”

As described at paragraph [0050] of the specification, as presently-presented, a preferred embodiment of the present invention includes a “data modulator 62...connected between the timing controller 61 and the data driver 63 to modulate data RGB using an approximation of the predetermined modulated data.” Also, see FIG. 7 of the present application. For instance, “[t]he data modulator 62 modulates current input data RGB using a look-up table in accordance with a change between the previous frame  $F_{n-1}$  and the current frame  $F_n$ . Further, the data modulator 62 derives a minute modulation value of the modulated data registered in the look-up table using an approximation to better modulate current input data RGB.” Paragraph [0055] of the specification, as presently-presented.

In particular, according to a preferred embodiment of the present invention, “[a] look-up table 74 compares the most significant bits MSB of the current frame  $F_n$  with those of the previous frame  $F_{n-1}$  to derive a desired size of the modulated data band.” Paragraph [0057], lines 4-6 of the original specification. Further, as described at paragraph [0060] of the specification, as presently-presented:

the look-up table 74 selects a desired data size of modulated data band Band(a, b, c, d) from the modulated data a, b, c, and d satisfying the following equations:

$$VD_n < VD_{n-1} \text{ ---> } MVD_n < VD_n \quad \dots (i)$$

$$VD_n = VD_{n-1} \text{ ---> } MVD_n = VD_n \quad \dots (ii)$$

$$VD_n > VD_{n-1} \text{ ---> } MVD_n > VD_n \quad \dots (iii)$$

In addition, for example, at paragraph [0064] of the specification, as presently-presented, “[t]he modulated data band to be approximated according to a preferred embodiment of the present invention is a data area between a range of gray level values in the horizontal direction and a range of gray level values in the vertical direction with respect to the look-up table 74

(shown as the data area within the dashed lines in FIG. 9) adjacent to the registered modulated data that are the most approximate to gray level values of the source data RGB.” Further, for example, as described at paragraph [0068] of the specification, as presently-presented, “These modulated data bands Band(a, b, c, d) is data ranges between four modulated data a, b, c, and d that is most approximate to a modulated data value corresponding to the most significant bits MSB inputted to the look-up table 74 as shown in FIG. 9.” Thus, Applicant respectfully submits that, at least in view of the above, the specification of the present application would enable one skilled in the art to which the feature of “modulated data band,” as set forth in independent claims 1, 6 and 15, as newly-amended, pertains or with which it is most nearly connected, to make and/or use the present invention.

Moreover, as described at paragraph [0069] of the specification, as presently-presented:

“the first approximation processor 75 carries out the first approximation using values of the least significant bits LSB of the current frame  $F_n$  within the modulated data band Band(a, b, c, d) to derive two first approximate values A1 and A2 that are vertically opposite to each other within the modulated data band Band(a, b, c, d). The first approximation is carried out along the X-axis within the modulated data band Band(a, b, c, d) with respect to the look-up table 74 as shown in FIG. 9.”

Also, as described at paragraph [0070] of the specification, as presently-presented:

In step S85, the second approximation processor 76 carries out a secondary approximation using values of the least significant bits LSB of the previous frame  $F_{n-1}$  within the modulated data band Band(a, b, c, d) to derive the modulated data X at the vertical line between the two first approximate values A1 and A2. The secondary approximation is carried out along the Y-axis within the modulated data band Band(a, b, c, d) with respect to the look-up table 74 as shown in FIG. 9.

That is, the modulated data X is not a predetermined data as registered in the look-up table 74, but rather is a data with a minute modulation value positioned within the modulated data band Band(a, b, c, d). Accordingly, it is respectfully submitted that the specification of the present

invention would enable one skilled in the art to which the feature of “deriving modulated data band including one modulated data having a gray scale approximately corresponding to a gray scale value of source data from the plurality of the modulated data and other modulated data adjacent to the one modulated data in a horizontal and vertical directions,” and “carrying out first and second approximations in the horizontal and vertical directions on the modulated data band to derive an approximate modulated data not registered in the look-up table, thereby modulating the source data,” as set forth in independent claim 1, as newly-amended, pertains or with which it is most nearly connected, to make and/or use the present invention.

For similar reasons, it is further respectfully submitted that the specification of the present invention would enable one skilled in the art to which the feature of “a look-up table having a plurality of registered modulated data and deriving modulated data band including one modulated data having a gray scale approximately corresponding to a gray scale value of source data and other modulated data adjacent to the one modulated data in a horizontal and vertical direction,” and “a modulator approximating in the horizontal and vertical directions within the modulated data band to derive an approximate modulated data not registered in the look-up table, thereby modulating the source data,” as set forth in independent claims 6 and 15, as newly-amended, pertains or with which it is most nearly connected, to make and/or use the present invention.

In view of the above, Applicant respectfully submits that the specification satisfies the requirements under 35 U.S.C. §112, first paragraph, and that claims 1-15 contain subject matter which was described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In addition, it is respectfully submitted that the specification would enable one skilled in the art to

recognize the approximation in two directions of the present invention is not specifically related temporal or spatial approximations in temporal, spatial or chromatic directions, as purported by the Office Action. Accordingly, Applicant respectfully requests that the rejection of claims 1-15 under 35 U.S.C. § 112, first paragraph, be withdrawn.

### **Conclusion**

In view of the foregoing, withdrawal of the rejections and allowance of the pending claims are earnestly solicited. Should there remain any questions or comments regarding this response or the application in general, the Examiner is urged to contact the undersigned at the number listed below.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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